

What is claimed is:

1. A system for selecting composition components for a composition formulation for a product to be manufactured according to a set of selection criteria comprising:

a computer readable medium;
a composition component database in communication with said computer readable medium representing composition components used in composition formulations for manufacturing products having color characteristics;

10 a color display in communications with said computer readable medium; and,
a set of computer readable instructions embodied in said computer readable medium for receiving selection criteria representing desirable color characteristics of a product to be manufactured, comparing said selection criteria with said color characteristics of said composition component database, selecting at least one 15 composition component from said composition component database that has color characteristics within a predetermined range of said selection criteria, and displaying said at least one selected composition component to a user via said color display.

2. The systems of claim 1 wherein said set of computer readable instructions include instructions for calibrating said color display to enable said display to provide 20 color correct images.

3. The system of claim 1 wherein said set of computer readable instructions include instructions for profiling said color display to enable said display to provide color correct images.

4. The systems of claim 1 wherein said computer readable instructions
5 include instructions for displaying said at least one selected composition component according to a first illuminant using a predetermined white point and brightness level so as to be able to view said at least one selected composition component's color appearance in relation to said first illuminant.

5. The system of claim 4 wherein said computer readable instructions
10 include instructions for altering said white point or said brightness level, thereby providing at second illuminant, and displaying said at least one selected composition component according to said second illuminant so that said at least one selected composition component's color appearance can be viewed under a plurality of light environments.

15 6. The system of claim 1 wherein said computer readable instructions include instructions for displaying a color appearance associated with said selection criteria in proximity with said at least one composition component so that a comparison between said selection criteria and said at least one composition component can be made.

20 7. The system of claim 1 wherein said computer readable instructions include instructions for displaying said physical properties of said at least one

composition component so that the associated characteristics of said at least one composition component are provided.

8. The system of claim 1 wherein said computer readable instructions include instructions for transmitting said at least one selected composition component information to a remote color calibrated display so that a remote user can view said at least one composition component.

9. The system of claim 1 wherein said computer readable instructions include instructions for displaying said at least one selected composition component in a neutral background under a predetermined white point and brightness level so as to be able to view said at least one selected composition component's color appearance.

10. The system of claim 1 wherein said computer readable instructions include instructions for displaying said at least one selected composition component in a proximal field surrounded by a predetermined neutral background so as to minimize the effects of adaptation when viewing said at least one composition component.

15 11. The system of claim 1 including:

a virtual surface representing said product to be manufactured embodied within said compute readable medium; and,

20 said computer readable instructions include instructions for applying a color to said virtual surface with a color represented by said at least one composition component so that said product to be manufactured can be viewed having a color appearance according to said at least one composition component.

12. The system of claim 11 including:

at least one special effect stored within said computer readable medium; and,
said computer readable instructions include instructions for retrieving said at
least one special effect and applying said at least one special effect to said virtual
surface so that said product to be manufactured can be viewed according to color
5 appearance and special effect.

13. The system of claim 1 including:

a composition formulation database in communication with said computer
readable medium; and,

10 said set of computer readable instructions include instructions for creating a
composition formulation according to a plurality of composition components and storing
said composition formulation in said composition formulation database.

14. A system for selecting composition formulations for a product to be
manufactured according to a set of selection criteria comprising:

a computer readable medium;

15 a composition formulation database in communication with said computer
readable medium representing formulations having at least once composition
component for manufacturing products having desirable color characteristics;

a color display in communication with said computer readable medium; and,

20 a set of computer readable instructions embodied in said computer readable
medium for receiving selection criteria representing desirable properties of a
composition formulation for a product to be manufactured, comparing said selection
criteria with said color characteristics of said composition formulation database,

selecting at least one composition formulation from said composition formulation database having color characteristics within a predetermined range of said selection criteria, and displaying said at least one selected composition formulation to a user via said color display.

5 15. The systems of claim 14 wherein said set of computer readable instructions include instructions for calibrating said color display device to enable said color display device to provide color correct images.

10 16. The system of claim 14 wherein said set of computer readable instructions include instructions for profiling said color display device to enable said display device to provide color correct images.

15 17. The systems of claim 14 wherein said computer readable instructions include instructions for displaying said at least one selected composition formulations according to a first illuminant using a predetermining white point and brightness level so as to be able to view said at least one selected composition formulation's color appearance in relation to said first illuminant.

20 18. The system of claim 17 wherein said computer readable instructions include instructions for altering said white point or brightness level, thereby providing a second illuminant, and displaying said at least one selected composition formulation according to said second illuminant so that said at least one selected composition formulation's color appearance can be viewed under a plurality of light environments.

19. The system of claim 14 wherein said computer readable instructions include instructions for displaying said selection criteria in proximity with said at least

one composition component so that a comparison of the color appearance between said selection criteria and said at least one composition formulation can be made.

20. The system of claim 14 wherein said computer readable instructions include instructions for displaying said physical properties of said at least one composition formulation so that the associated characteristics of said at least one composition formulation are provided.
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21. The system of claim 14 wherein said computer readable instructions include instructions for transmitting said at least one selected composition formulation information to a remote color calibrated display so that a remote user can view said at 10 least one composition formulation.

22. The system of claim 14 wherein said computer readable instructions include instructions for displaying said at least one selected composition formulation in a neutral background according to a predetermined white point and brightness level so as to be able to view said at least one selected composition formulation's color 15 appearance.

23. The system of claim 14 wherein said computer readable instructions include instructions for displaying said at least one selected composition formulation in the proximal field surrounded by a predetermined neutral background so as to minimize the effects of adaptation when viewing said at least one composition formulation.

20 24. The system of claim 14 including:

a virtual surface representing said product to be manufactured embodied within said compute readable medium; and,

said computer readable instructions include instructions for applying a color to said virtual surface with a color represented by said at least one composition formulation so that said product to be manufactured can be viewed having a color appearance according to said at least one composition formulation.

5 25. The system of claim 24 including:

at least one special effect stored within said computer readable medium; and,

10 said computer readable instructions include instructions for retrieving said at least one special effect and applying said at least one special effect to said virtual surface so that said product to be manufactured can be viewed according to color appearance and special effect.

26. A method for selecting a composition component for inclusion in a composition formulation for a product to be manufactured according to a set of selection criteria comprising the steps of:

15 providing a set of composition components representing composition components used in composition formulations for manufacturing products having color characteristics;

 receiving said selection criteria representing desirable color characteristics of a product to be manufactured;

20 selecting at least one composition component from said set of composition components having color characteristics within a predetermined range of said selection criteria; and,

displaying said at least one selected composition component for viewing on a color corrected display.

27. The method of claim 26 including the step of calibrating said display so that said display is color correct.

5 28. The method of claim 26 including the step of profiling said display so that said display is color correct.

29. The method of claim 26 including the step of displaying said at least one composition component using a first illuminant using a predetermined white point and brightness level so as to be able to view said at least one selected composition 10 component's color appearance in relation to said first illuminant.

30. The method of claim 29 including the steps of:

altering said white point, thereby providing a second illuminant; and,
displaying said at least one selected composition component according to said 15 second illuminant so that said at least one selected composition component's color appearance can be viewed under a plurality of light environments.

31. The method of claim 29 including the steps of:

altering said brightness level, thereby providing a second illuminant; and,
displaying said at least one selected composition component according to said 20 second illuminant so that said at least one selected composition component's color appearance can be viewed under a plurality of light environments.

32. The method of claim 26 including the step of displaying the color appearance of said color characteristics of said selection criteria in proximity with said at

least one composition component's color appearance so that a color appearance comparison between said selection criteria and said at least one composition component can be made.

33. The method of claim 26 including the step of displaying said physical properties of said at least one composition component so that the associated physical properties of said at least one composition component are provided.

34. The method of claim 26 including the step of transmitting said at least one selected composition component information to a remote color calibrated display so that a remote user can view said at least one composition component.

35. The method of claim 26 including the steps of displaying said at least one selected composition component according to a first brightness using a predetermined white point so as to be able to view said at least one selected composition component's color appearance.

36. The method of claim 26 including the steps of displaying said at least one selected composition component surrounded by a predetermined background so as to minimize the effects of adaptation when viewing said at least one composition component.

37. The method of claim 26 including the steps of:
providing a virtual surface representing said product to be manufactured; and,
applying color to said virtual surface with a color represented by said at least one composition component so that said product to be manufactured can be viewed having a color appearance according to said at least one composition component.

38. The method of claim 37 including the steps of:

providing at least one special effect stored within said computer readable medium; and,

applying said at least one special effect to said virtual surface so that said product to be manufactured can be viewed according to color appearance and special effect.

39. The method of claim 26 including the steps of:

determining a composition formulation according to at least one composition component; and,

10 storing said composition formulation in a computer readable medium.

40. A method for selecting a composition formulation for a product to be manufactured according to a set of selection criteria comprising the steps of:

providing a set of composition formulations representing composition formulations used for manufacturing products having color characteristics;

15 receiving said selection criteria representing desirable color characteristics of a product to be manufactured;

selecting at least one formulation from said set of composition formulations having color characteristics within a predetermined range of said selection criteria; and,

displaying said at least one selected composition formulation for viewing on a 20 color corrected display.

41. The method of claim 40 including the step of calibrating said display so that said display is color correct.

42. The method of claim 40 including the step of profiling said display so that said display is color correct.

43. The method of claim 40 including the step of displaying said at least one composition formulation using a first illuminant using a predetermined white point and
5 brightness level so as to be able to view said at least one selected composition formulation's color appearance in relation to said first illuminant.

44. The method of claim 43 including the steps of:

altering said white point, thereby providing at second illuminant; and,
displaying said at least one selected composition formulation according to said
10 second illuminant so that said at least one selected composition formulation's color appearance can be viewed under a plurality of light environments.

45. The method of claim 40 including the step of displaying the color appearance of said color characteristics of said selection criteria in proximity with said at least one composition formulation's color appearance so that a color appearance
15 comparison between said selection criteria and said at least one composition formulation can be made.

46. The method of claim 40 including the step of transmitting said at least one selected composition formulation information to a remote color calibrated display so that a remote user can view said at least one composition formulation.

20 47. The method of claim 40 including the steps of displaying said at least one selected composition formulation according to a first brightness using a predetermined

white point so as to be able to view said at least one selected composition formulation's color appearance.

48. The method of claim 40 including the steps of displaying said at least one selected composition formulation surrounded by a predetermined background so as to minimize the effects of adaptation when viewing said at least one composition formulation.

49. The method of claim 40 including the steps of:
providing a virtual surface representing said product to be manufactured; and,
applying color to said virtual surface with a color represented by said at least one composition formulation so that said product to be manufactured can be viewed having
10 a color appearance according to said at least one composition formulation.

50. The method of claim 49 including the steps of:
providing at least one special effect stored within said computer readable medium; and,
15 applying said at least one special effect to said virtual surface so that said product to be manufactured can be viewed according to color appearance and special effect.